IN THE CLAIMS

Please amend the claims as follows:

Claims 1-9 (Canceled).

Claim 10 (Previously Presented): A document classification system for classifying a document according to contents of the document, said document classification system comprising:

input means for inputting document data of the document;

analyzing means for analyzing the document data so as to obtain analysis information;

vector producing means for producing a document feature vector with respect to the document data based on the analysis information;

transforming function calculating means for calculating a representation transforming function used for projecting the document feature vector onto a space in which similarity between the document feature vectors is reflected with a dimensional number different from a dimensional number of the document feature vector, the transforming function calculating means calculating the representation transforming function by using an inner product calculated between the document feature vectors;

vector transforming means for transforming the document feature vector by using the representation transforming function;

classification means for classifying the document based on similarity between the document feature vectors transformed by the vector transforming means; and

classification result storing means for storing a result of classification performed by the classification means.

Claim 11 (Original): The document classification system as claimed in 10, further comprising inner product calculating means for calculating an inner product between the document feature vectors, wherein said representation transforming function calculating means calculates the representation transforming function by using the inner product.

Claim 12 (Previously Presented): A document classification system for classifying a document according to contents of the document, said document classification system comprising:

input means for inputting document data of the document;

analyzing means for analyzing the document data so as to obtain analysis information;

vector producing means for producing a document feature vector with respect to the document data based on the analysis information;

transforming function calculating means for calculating a representation transforming function used for projecting the document feature vector onto a space in which similarity between the document feature vectors is reflected;

vector transforming means for transforming the document feature vector by using the representation transforming function;

classification means for classifying the document based on similarity between the document feature vectors transformed by the vector transforming means;

classification result storing means for storing a result of classification performed by the classification means;

inner product calculating means for calculating an inner product between the document feature vectors, wherein said representation transforming function calculating means calculates the representation transforming function by using the inner product; and

document similarity information setting means for setting document similarity setting

information including data representing an author of the document and a date of production

of the document, wherein said representation transforming function calculating means

calculates the representation transforming function by using the inner product and the

document similarity information.

Claim 13 (Original): The document classification system as claimed in 10, further

comprising:

vector storing means for storing the document feature vector produced by said vector

producing means; and

transforming function storing means for storing the representation transforming

function calculated by said representation transforming function calculating means.

Claim 14 (Previously Presented): A document classification system for classifying a

document according to contents of the document, said document classification system

comprising:

input means for inputting document data of the document;

analyzing means for analyzing the document data so as to obtain analysis information;

vector producing means for producing a document feature vector with respect to the

document data based on the analysis information;

transforming function calculating means for calculating a representation transforming

function used for projecting the document feature vector onto a space in which similarity

between the document feature vectors is reflected;

vector transforming means for transforming the document feature vector by using the

representation transforming function;

classification means for classifying the document based on similarity between the document feature vectors transformed by the vector transforming means;

classification result storing means for storing a result of classification performed by the classification means; and

vector correcting means for correcting the document feature vector before the document feature vector is transformed by said vector transforming means, a correction being performed by processing one of the document feature vector and a feature dimension constituting the document feature vector in accordance with a rule established by characteristics of words extracted by said analyzing means.

Claim 15 (Original): The document classification system as claimed in 14, further comprising transforming function correcting means for correcting the representation transforming function calculated by said transforming function calculating means when the feature dimension is changed due to a correction of the document feature vector by said vector correcting means so that the document feature vector is transformed by said vector transforming means in accordance with the changed feature dimension.

Claim 16 (Previously Presented): A document classification system for classifying a document according to contents of the document, said document classification system comprising:

input means for inputting document data of the document;

analyzing means for analyzing the document data so as to obtain analysis information;

vector producing means for producing a document feature vector with respect to the document data based on the analysis information;

transforming function calculating means for calculating a representation transforming

function used for projecting the document feature vector onto a space in which similarity

between the document feature vectors is reflected;

vector transforming means for transforming the document feature vector by using the

representation transforming function;

classification means for classifying the document based on similarity between the

document feature vectors transformed by the vector transforming means;

classification-result storing means for storing a result of classification performed by

the classification means;

transforming function correction instructing means for sending an instruction

regarding a process to be applied on a feature dimension of the representation transforming

function; and

transforming function correcting means for correcting the representation transforming

function based on a content of the instruction sent from said transforming function correction

instructing means.

Claim 17 (Original): The document classification system as claimed in 16, wherein

the process indicated in the content of the instruction is performed by using data of an

arbitrary document vector.

Claim 18 (Original): The document classification system as claimed in 16, wherein

the process indicated in the content of the instruction is performed by using the document

feature vectors.

Claim 19 (Original): The document classification system as claimed in 16, wherein the process indicated in the content of the instruction is performed by using the analysis information obtained by said analyzing means.

Claim 20 (Original): The document classification system as claimed in 16, wherein the process indicated in the content of the instruction is performed by using the result of classification stored in said classification-result storing means.

Claim 21 (Previously Presented): A document classification system for classifying a document according to contents of the document, said document classification system comprising:

input means for inputting document data of the document;

analyzing means for analyzing the document data so as to obtain analysis information;

vector producing means for producing a document feature vector with respect to the document data based on the analysis information;

transforming function calculating means for calculating a representation transforming function used for projecting the document feature vector onto a space in which similarity between the document feature vectors is reflected;

vector transforming means for transforming the document feature vector by using the representation transforming function;

classification means for classifying the document based on similarity between the document feature vectors transformed by the vector transforming means;

classification result storing means for storing a result of classification performed by the classification means;

an initial cluster centroid designating means for designating an initial cluster centroid;

and

initial cluster centroid registering means for registering the initial cluster centroid

designated by said initial cluster centroid designating means,

wherein said classification means classifies the document in accordance with the

initial cluster centroid registered by said initial cluster centroid registering means.

Claim 22 (Original): The document classification system as claimed in 21, wherein

the initial cluster centroid designated by said initial cluster centroid designating means is

arbitrary document vector data.

Claim 23 (Original): The document classification system as claimed in 21, wherein

the initial cluster centroid designated by said initial cluster centroid designating means is the

document feature vector.

Claim 24 (Original): The document classification system as claimed in 21, wherein

the initial cluster centroid designated by said initial cluster centroid designating means is the

analysis information obtained by said analyzing means.

Claim 25 (Original): The document classification system as claimed in 21, wherein

the initial cluster centroid designated by said initial cluster centroid designating means is the

result of classification stored by said classification-result storing means.

Claims 26-41 (Canceled).

Claim 42 (Previously Presented): A processor readable medium storing program code causing a computer to classify a document according to contents of the document, comprising:

first program code means for inputting document data of the document;

second program code means for analyzing the document data so as to obtain analysis information;

third program code means for producing a document feature vector with respect to the document data based on the analysis information;

fourth program code means for calculating a representation transforming function used for projecting the document feature vector onto a space in which similarity between the document feature vectors is reflected with a dimensional number different from a dimensional number of the document feature vector, the fourth program code means calculating the representation transforming function by using an inner product calculated between the document feature vectors;

fifth program code means for transforming the document feature vector by using the representation transforming function;

sixth program code means for classifying the document based on similarity between the document feature vectors transformed by the fifth program code means; and

seventh program code means for storing a result of classification performed by the classification means.

Claim 43 (Original): The processor readable medium as claimed in 42, further comprising eighth program code means for calculating an inner product between the document feature vectors, wherein the representation transforming function is calculated by using the inner product.

Claim 44 (Previously Presented): A processor readable medium storing program code causing a computer to classify a document according to contents of the document, comprising:

first program code means for inputting document data of the document;

second program code means for analyzing the document data so as to obtain analysis information;

third program code means for producing a document feature vector with respect to the document data based on the analysis information;

fourth program code means for calculating a representation transforming function used for projecting the document feature vector onto a space in which similarity between the document feature vectors is reflected;

fifth program code means for transforming the document feature vector by using the representation transforming function;

sixth program code means for classifying the document based on similarity between the document feature vectors transformed by the fifth program code means;

seventh program code means for storing a result of classification performed by the classification means;

eighth program code means for calculating an inner product between the document feature vectors, wherein the representation transforming function is calculated by using the inner product; and

ninth program code means for setting document similarity setting information including data representing an author of the document and a date of production of the document, wherein the representation transforming function is calculated by using the inner product and the document similarity information.

Claim 45 (Original): The processor readable medium as claimed in 42, further comprising:

tenth program code means for storing the document feature vector produced by the third program code means; and

eleventh program code means for storing the representation transforming function calculated by the fourth program code means.

Claim 46 (Previously Presented): A processor readable medium storing program code causing a computer to classify a document according to contents of the document, comprising:

first program code means for inputting document data of the document;

second program code means for analyzing the document data so as to obtain analysis information;

third program code means for producing a document feature vector with respect to the document data based on the analysis information;

fourth program code means for calculating a representation transforming function used for projecting the document feature vector onto a space in which similarity between the document feature vectors is reflected;

fifth program code means for transforming the document feature vector by using the representation transforming function;

sixth program code means for classifying the document based on similarity between the document feature vectors transformed by the fifth program code means;

seventh program code means for storing a result of classification performed by the classification means; and

eighth program code means for correcting the document feature vector before the

document feature vector is transformed by the fifth program code means, a correction being

performed by processing one of the document feature vector and a feature dimension

constituting the document feature vector in accordance with a rule established by

characteristics of words extracted by the second program code means.

Claim 47 (Previously Presented): The processor readable medium as claimed in 46,

further comprising ninth program code means for correcting the representation transforming

function calculated by the fourth program code means when the feature dimension is changed

due to a correction of the document feature vector by the eighth program code means so that

the document feature vector is transformed by the fifth program code means in accordance

with the changed feature dimension.

Claim 48 (Previously Presented): A processor readable medium storing program code

causing a computer to classify a document according to contents of the document,

comprising:

first program code means for inputting document data of the document;

second program code means for analyzing the document data so as to obtain analysis

information;

third program code means for producing a document feature vector with respect to the

document data based on the analysis information;

fourth program code means for calculating a representation transforming function

used for projecting the document feature vector onto a space in which similarity between the

document feature vectors is reflected;

fifth program code means for transforming the document feature vector by using the representation transforming function;

sixth program code means for classifying the document based on similarity between the document feature vectors transformed by the fifth program code means;

seventh program code means for storing a result of classification performed by the classification means;

eighth program code means for sending an instruction regarding a process to be applied on a feature dimension of the representation transforming function; and

ninth program code means for correcting the representation transforming function based on a content of the instruction sent by the eighth program code means.

Claim 49 (Previously Presented): A processor readable medium storing program code causing a computer to classify a document according to contents of the document, comprising:

first program code means for inputting document data of the document;

second program code means for analyzing the document data so as to obtain analysis information;

third program code means for producing a document feature vector with respect to the document data based on the analysis information;

fourth program code means for calculating a representation transforming function used for projecting the document feature vector onto a space in which similarity between the document feature vectors is reflected;

fifth program code means for transforming the document feature vector by using the representation transforming function;

sixth program code means for classifying the document based on similarity between

the document feature vectors transformed by the fifth program code means;

seventh program code means for storing a result of classification performed by the

classification means;

eighth program code means for designating an initial cluster centroid; and

ninth program code means for registering the initial cluster centroid designated by the

eighth program code means,

wherein the document is classified in accordance with the initial cluster centroid

registered by the ninth program code means.

Claims 50-52 (Canceled).